

# Mikroport® System 2015

Bedienungsanleitung

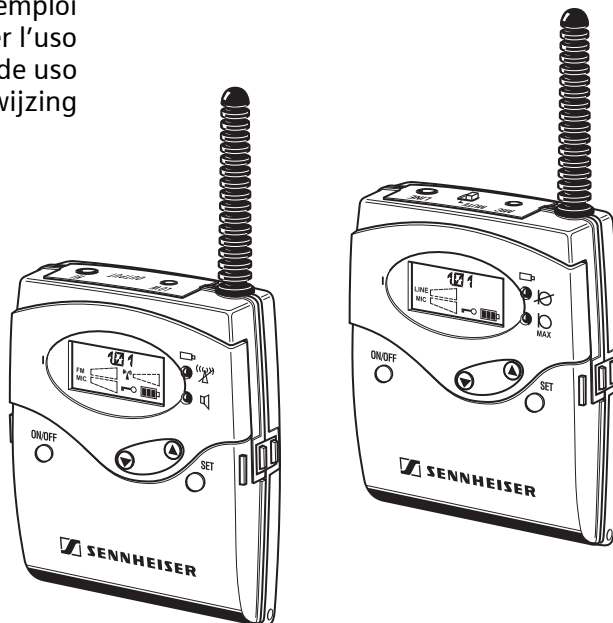
Instructions for use

Notice d'emploi

Istruzioni per l'uso

Instrucciones de uso

Gebruiksaanwijzing



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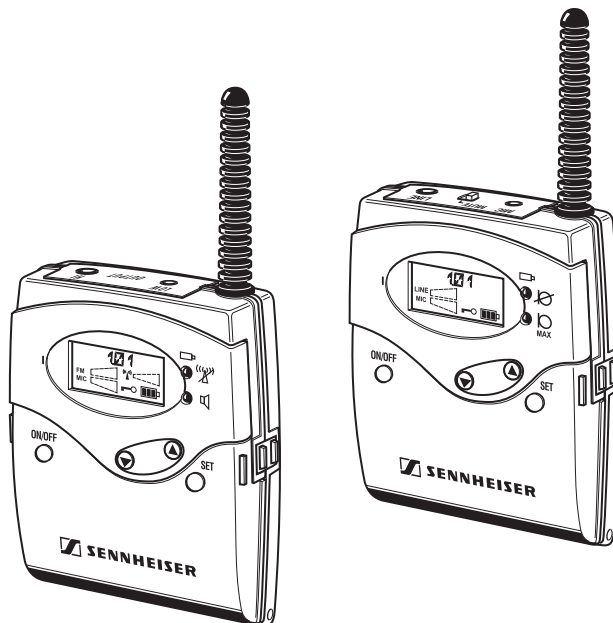
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# Mikroport® System 2015

Instructions for use



## Safety instructions

Never open an electronic unit! If units are opened by customers in breach of this instruction, the warranty becomes null and void.

Keep the units away from central heating radiators and electric heaters. Never expose them to direct sunlight.

Use the units in dry rooms only.

Use a damp cloth for cleaning the units. Do not use any cleansing agents or solvents.

Thank you for choosing Sennheiser!

We have designed these products to give you reliable operation over many years. Over half a century of expertise in the design and manufacture of high-quality electro-acoustic equipment have made Sennheiser a world-leading company in this field.

Please take a few moments to read these instructions carefully, as we want you to enjoy your new Sennheiser products quickly and to the fullest.

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# The 2015 Mikroport® System

The 2015 Mikroport® System allows the integration of people with hearing problems in schools and universities, at the workplace and in their free time. Design and characteristics of the 2015 Mikroport® System are ideally suited to the needs of the users. Operation is simple and easy to learn. The units are small, lightweight and unobtrusive when worn.

## The operating principle of the 2015 Mikroport® System

The speaker, for example the teacher, wears the SK 2015 transmitter. The person with hearing problems, the pupil in this case, wears the EK 2015 receiver. The receiver can be equipped either with a connecting cable for a hearing aid or with headphones. Without wires and with full freedom of movement, the pupil can now hear the teacher as if he were sitting right next to him. For the time in which the teacher is speaking, ambient noise is reduced markedly, so that the dialog between teacher and pupil has priority at all times. When the teacher is not speaking, the pupil can hear his fellow pupils either via the microphones in the hearing aid or via the internal microphone in the receiver. The 2015 Mikroport® System gives reliable assistance, even in difficult listening situations. The transmitting power is sufficient for relatively large distances. The MKE 2015-2 clip-on microphone ensures a high degree of intelligibility as well as the possibility to lip-read at the same time. The highest degree of intelligibility is ensured by the ME 2015-H headset microphone (optional accessory). Due to the position close to the mouth, loud background noise and bad acoustics are faded out. The wide range of accessories allows the receiver to be connected to almost any hearing aid; it can be coupled to the latter either electrically or inductively.

Transmitter and receiver are powered via the BA 2015 battery pack. The operating time of the battery pack is sufficient for a normal working day (up to 12 hours). The charging contacts on transmitter and receiver allow the units to be charged in the L 2015 charger without the necessity of removing the battery pack.

If power supply is not available for recharging the battery pack, you can alternatively use 1.5 V AA size batteries. When powered by batteries, transmitter and receiver can also be used for up to 12 hours.

Additional audio sources (e.g. CD player, television, sound card of a computer) can be connected to the 3.5 mm jack socket of the transmitter.

Especially for integrative schools, there is the advantage that you can combine the 2015 Mikroport® System with the Soundfield EMP 2015 System. In addition, transmitters and receivers of the evolution wireless series can be used together with the 2015 Mikroport® System. For details, please visit our web site at [www.sennheiserusa.com](http://www.sennheiserusa.com).

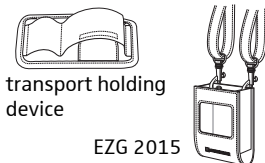
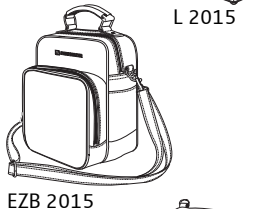
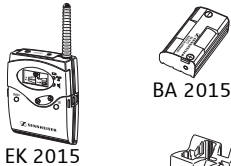
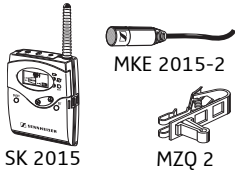
## Delivery includes

The 2015 Mikroport® System consists of the following components:

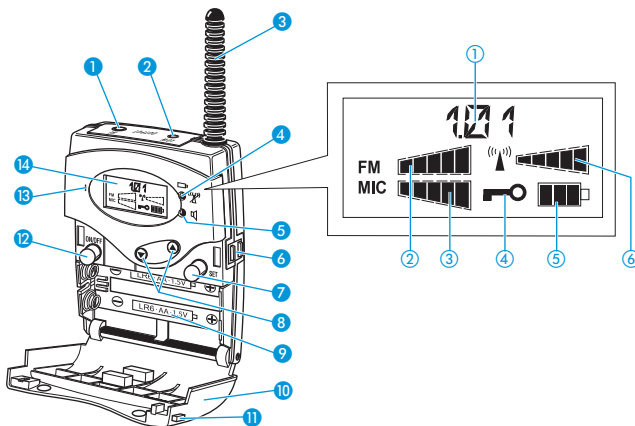
- 1 SK 2015 transmitter
- 1 MKE 2015-2 clip-on microphone
- 1 EK 2015 receiver
- 2 BA 2015 battery pack
- 1 L 2015 charger
- 1 MZQ 2 microphone clip
- 1 power supply NT 1
- 1 EZB 2015 system case  
incl. transport case, transport holding device (for EK 2015 and SK 2015) and shoulder strap
- 2 EZG 2015 pouches with one neck strap each
- 3 instructions for use:  
Instructions for use of 2015 Mikroport® System  
Instructions for use of MKE 2015-2  
Instructions for use of L 2015

### Note:

All components of the 2015 Mikroport® System are also available separately (see "System variants and accessories" on page 103).



# Operating controls of the EK 2015 receiver



## Operating controls

- ① Headphone output (HI), 3.5 mm jack socket
- ② Output for hearing aids (LOW), 2.5 mm jack socket
- ③ Antenna
- ④ Red LED for battery status and missing transmitter RF signal indication
- ⑤ Green LED for audio signal indication
- ⑥ Charging contacts
- ⑦ SET button
- ⑧ ▲/▼ rocker button (UP/DOWN)
- ⑨ Battery compartment
- ⑩ Battery compartment cover
- ⑪ Unlocking button
- ⑫ ON/OFF button with ESC function
- ⑬ Internal microphone
- ⑭ LC display

## LC display panel

- ① Alphanumeric display
- ② 5-step level display for received audio signal (FM)
- ③ 5-step display for microphone level (MIC) of internal microphone (only with switched-on internal microphone)
- ④ Lock mode icon (lock mode is activated)
- ⑤ 4-step battery status display
- ⑥ 5-step level display for received RF signal

### Note:

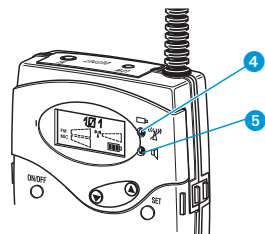
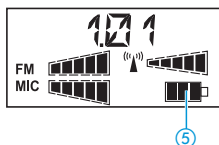
Depending on the individual configuration of your receiver, some of the displays shown here may not appear on the display panel.

## Indications and displays on the receiver

### Battery status indication

The 4-step battery status display ⑤ on the display panel and the red LED ④ provide information on the capacity of the BA 2015 battery pack or the batteries:

|                                              |                                                                            |
|----------------------------------------------|----------------------------------------------------------------------------|
| 3 segments:                                  | capacity approx. 100 %                                                     |
| 2 segments:                                  | capacity approx. 70 %                                                      |
| 1 segment:                                   | capacity approx. 30 %                                                      |
| Battery status display and red LED flashing: | LOW BAT (you should immediately replace the battery pack or the batteries) |

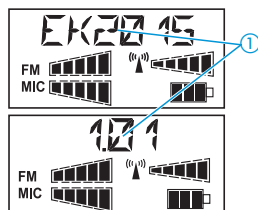


### Warning indication for missing RF signal

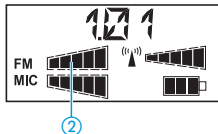
The red LED ④ lights up constantly when no RF signal is being received, e.g. because the microphone of the transmitter is muted.

### Audio signal indication

The green LED ⑤ lights up when an audio signal of sufficient strength (e.g. the voice of the speaker) is being received.

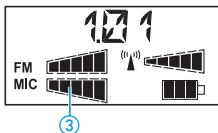


After switching on the receiver, the alphanumeric display ① first displays the name of the receiver. After approx. three seconds, the standard display appears, indicating the channel bank (1) and the channel (01).



### Display for the audio level

The display ② shows the level of the received audio signal.

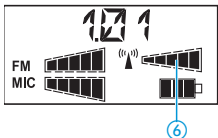


### Display for microphone level (internal microphone)

The display ③ shows the level of the internal microphone.

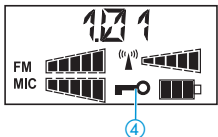
#### Note:

Depending on the configuration of your receiver, this display may not appear on the display panel.



### Display for the RF level

The display ⑥ shows the level of the received RF signal. The more segments displayed, the better the reception.



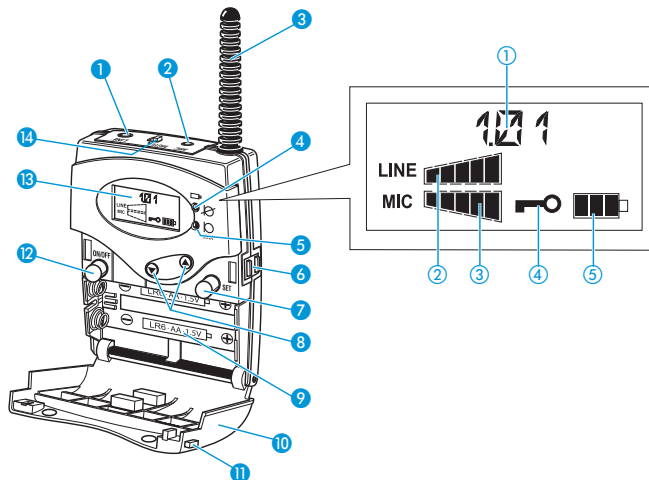
### Display for lock mode

If the lock mode is activated, the lock mode icon ④ appears on the standard display. If the lock mode is deactivated, the lock mode icon disappears from the standard display.

### Display backlighting

After pressing a button, the display remains backlit for approx. 15 seconds.

# Operating controls of the SK 2015 transmitter



## Operating controls

- ① Audio input (LINE), 3.5 mm jack socket
- ② Microphone input (MIC), 2.5 mm jack socket
- ③ Antenna
- ④ Red LED for battery status and muting indication
- ⑤ Yellow LED for audio peak
- ⑥ Charging contacts
- ⑦ SET button
- ⑧ ▲/▼ rocker button (UP/DOWN)
- ⑨ Battery compartment
- ⑩ Battery compartment cover
- ⑪ Unlocking button
- ⑫ ON/OFF button with ESC function

- ⑬ LC display
- ⑭ MUTE switch for microphone input

## LC display panel

- ① Alphanumeric display
- ② 5-step display for line level (LINE)
- ③ 5-step display for microphone level (MIC)
- ④ Lock mode icon (lock mode is activated)
- ⑤ 4-step battery status display

### Note:

Depending on the individual configuration of your transmitter, some of the displays shown here may not appear on the display panel.

## Indications and displays on the transmitter

### Battery status indication

The 4-step battery status display ⑤ on the display panel and the red LED ④ provide information on the capacity of the BA 2015 battery pack or the batteries:

|                                              |                                                                            |
|----------------------------------------------|----------------------------------------------------------------------------|
| 3 segments:                                  | capacity approx. 100 %                                                     |
| 2 segments:                                  | capacity approx. 70 %                                                      |
| 1 segment:                                   | capacity approx. 30 %                                                      |
| Battery status display and red LED flashing: | LOW BAT (you should immediately replace the battery pack or the batteries) |

### MUTE indication

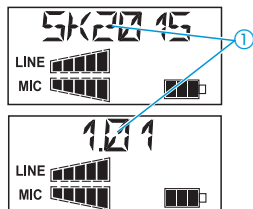
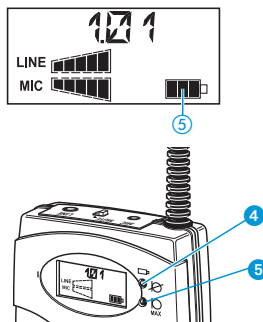
The red LED ④ lights up constantly when the microphone of the transmitter is muted.

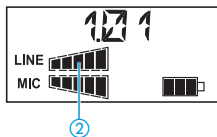
### Audio peak indication

The yellow LED ⑤ should only light up briefly during peak level passages. When it lights up constantly, the line or microphone input level is too high.

### Alphanumeric display

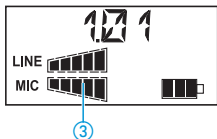
After switching on the transmitter, the alphanumeric display ① first displays the name of the transmitter. After approx. three seconds, the standard display appears, indicating the channel bank (1) and the channel (01).





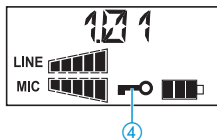
### Display for line level

The display for line level (LINE) ② shows the level of the line input. The display should show full deflection only during the loudest passages.



### Display for microphone level

The display for microphone level (MIC) ③ shows the level of the connected microphone. The display should show full deflection only when you speak very loudly.



### Display for lock mode

If the lock mode is activated, the lock mode icon ④ appears on the standard display. If the lock mode is deactivated, the lock mode icon disappears from the standard display.

### Display backlighting

After pressing a button, the display remains backlit for approx. 15 seconds.

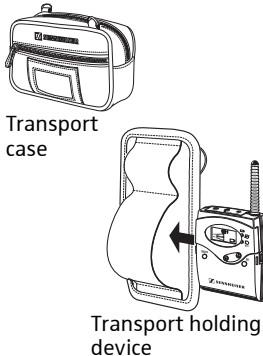
# Preparing the units for use

Transmitter and receiver have been adapted by your technical expert to suit your individual applications.

## Transporting the transmitter and receiver

In addition to the EZB 2015 system case offering room to store all components of the system, delivery also includes a transport case. This is suitable for the day-to-day transport of a transmitter and a receiver and of two replacement battery packs.

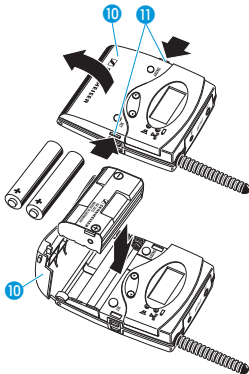
Push the transmitter and the receiver into the transport holding device as shown on the left. The units fit snugly in the case preventing damage during transport. It is possible to store the battery packs in the front pocket of the transport case, as well as in the transport holding device.



## Inserting the battery pack/batteries (transmitter and receiver)

For powering the units, we recommend using the supplied BA 2015 battery pack. The battery pack can be recharged in the L 2015 charger while remaining in the transmitter or receiver (see operating manual of the charger). If no power supply is available for recharging the battery pack, you can alternatively use 1.5 V AA size batteries.

- ▶ Press the two unlocking buttons **11** and open the battery compartment cover **10**.
- ▶ Insert the battery pack or the batteries as shown on the left. Please observe correct polarity when inserting the battery pack or the batteries.
- ▶ Close the battery compartment. The battery compartment cover locks into place with an audible click.



## How to properly use the battery pack or the batteries

For battery pack operation, only use the BA 2015 battery pack in order to ensure optimum operational reliability. Batteries and rechargeable battery cells have different discharging curves. Transmitter and receiver are able to identify the BA 2015 battery pack and to use it to full capacity. They also adapt the battery status display according to the type of power supply used (batteries or battery pack). Individual rechargeable battery cells will not be identified as battery packs.

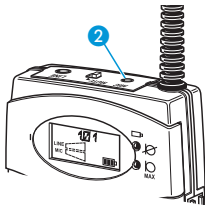
- ▶ After use (e.g. during the night), charge the BA 2015 battery pack of the transmitter or receiver in the L 2015 charger. The maximum charging time is 2.5 hours, at which time the unit then switches to trickle charging.
- ▶ If you do not use the transmitter or receiver for extended periods of time (e.g. while you are on holiday), remove the battery pack or the batteries. After three months at the latest, the battery packs will need a refresh charge in the L 2015 charger. This prevents damage to the battery pack due to self-discharge.

## Connecting sound sources to the transmitter

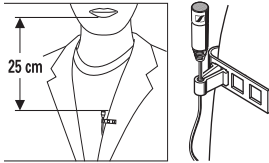
### Connecting the microphones to the transmitter

In addition to the supplied MKE 2015-2 clip-on microphone, a plug-on microphone (MKE 2015-0) and a headset microphone (ME 2015-H) are available as optional accessories. DC powering of these condenser microphones is via the microphone input.

- ▶ Connect the 2.5 mm jack plug of the microphone or the microphone cable to the transmitter's 2.5 mm jack socket (MIC) ②.
- ▶ Via the operating menu, adjust the sensitivity of the microphone input (see "Adjusting the microphone sensitivity" on page 82).



## Attaching and positioning the microphones



MKE 2015-2



MKE 2015-0

The MKE 2015-2 clip-on microphone (supplied) and the MKE 2015-0 plug-on microphone (optional accessory) are omni-directional and pick up sound equally from all directions. They are the best choice if movements of the speaker's head have to be compensated for. However, they should be attached as close as possible to the sound source.

Use the microphone clip to attach the MKE 2015-2 clip-on microphone to clothing (e.g. tie, lapel) at a maximum distance of 9.8 inches from your mouth.

When using the MKE 2015-0 plug-on microphone, wear the transmitter around your neck using the EZG 2015 pouch with neck strap. Adjust the length of the neck strap so that the distance between the microphone and your mouth is 9.8 inches at the most.

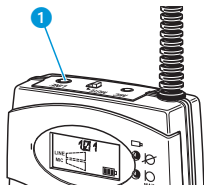
You can use the MKE 2015-0 plug-on microphone to transmit the speech of several persons at a time with only one transmitter. Put the transmitter with the plug-on microphone on the table in front of the speaker. The person speaking should keep a distance of approx. 9.8 inches to the microphone.

The ME 2015-H headset microphone (optional accessory) has a super-cardioid pick-up pattern.



ME 2015-H

- ▶ Adjust the ME 2015-H headset microphone so that a comfortable and secure fit is ensured.
- ▶ Position the microphone of the headset at the corner of your mouth.
- ▶ Make sure that the sound inlet is directed towards your mouth. The sound inlet is marked with a little dot.



## Connecting audio sources to the transmitter

You can connect audio sources such as a CD player, a television, or the sound card of a computer to the line input of the transmitter.

- ▶ Connect the 3.5 mm jack plug of the connecting cable to the transmitter's 3.5 mm jack socket (LINE) ①.
- ▶ Via the operating menu, adjust the sensitivity of the line input (see "Adjusting the sensitivity of the line input" on page 82).

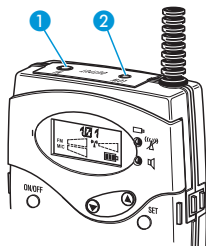
### Note:

If the transmitter is preset so that the line input is switched off, the display for line level is not shown on the display panel.

## Connecting the receiver to hearing aids or headphones

### Connecting the receiver to hearing aids with direct audio input

- ▶ Connect a hearing aid with direct audio input to the receiver's 2.5 mm jack socket (LOW) ②. Suitable connecting cables (see "System variants and accessories" on page 103) are available from your Sennheiser dealer.



### Connecting the receiver to a hearing aid without audio input (hearing aid must have Telecoil)

- ▶ Connect the EZT 2015 induction neck loop or the EZI 120 induction couplers for hearing aids without audio input to the receiver's 3.5 mm jack socket (HI) ①. Suitable connecting cables for the induction couplers (see "System variants and accessories" on page 103) are available from your Sennheiser dealer.

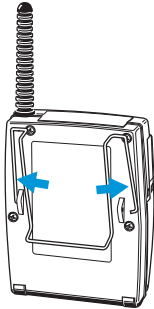
### Connecting the headphones

You must only connect headphones with a stereo jack plug and a minimum impedance of 32  $\Omega$  to the receiver (see "Connector assignment" on page 102).

- ▶ Connect the headphones to the receiver's 3.5 mm jack socket (HI) ①.

## Attaching the transmitter or receiver to clothing

### Attaching the transmitter or receiver to clothing using the belt clip



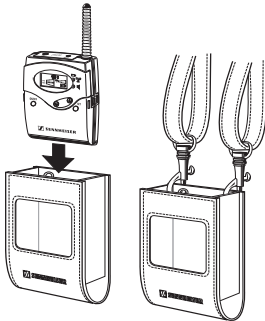
Using the supplied belt clip, you can attach the transmitter or receiver to clothing (e.g. belt, waistband).

The belt clip is detachable so that you can also attach the transmitter or receiver with the antenna pointing downwards. To do so, attach the clip as follows:

- ▶ Remove the belt clip from its fixing points by pushing in the direction of the arrows.
- ▶ Rotate the belt clip by 180°.
- ▶ Insert the belt clip into its fixing points.

### Wearing the transmitter or receiver around your neck

Using the EZG 2015 pouch, you can wear the transmitter or receiver around your neck.

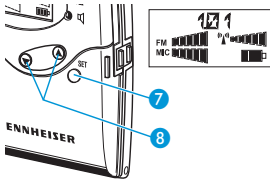


- ▶ Insert the transmitter or receiver into the pouch.
- ▶ Use the snap hooks to attach the neck strap to the eyelet of the pouch as shown.

#### Note:

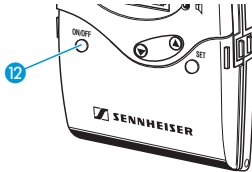
When using the transmitter with the MKE 2015-0 plug-on microphone (optional accessory), adjust the length of the neck strap so that the distance between the microphone and your mouth is 9.8 inches at the most.

## Using the receiver



After you have switched on the receiver, it can then be operated with the **SET** button 7 and the **▲/▼** rocker button (UP/DOWN) 8, making it very easy to use for children. All settings become effective immediately. The display then switches back to the standard display.

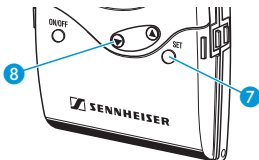
## Switching the receiver on/off



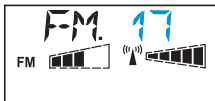
- ▶ Press the **ON/OFF** button 12 to switch the receiver on. The name of the receiver is displayed for approx. three seconds and then switches to the standard display.
- ▶ To switch the receiver off, press the **ON/OFF** button 12 until "OFF" appears on the display.

## Activating/deactivating the lock mode

The receiver has a lock mode that prevents accidental programming or switching off during operation.



- ▶ Press the **SET** button 7 and keep it pressed.
- ▶ Press the **▼** button (DOWN) 8. "LOCK" appears on the display. The lock mode is activated and the lock mode icon 4 appears on the standard display.
- ▶ To deactivate the lock mode, press the **SET** button 7 again and keep it pressed.
- ▶ Press the **▼** button (DOWN) 8. "UNLOCK" appears on the display. The lock mode is deactivated and the lock mode icon 4 disappears from the standard display.



## Adjusting the level of the received audio signal

You can adjust the level of the received audio signal (e.g. the voice of the speaker) in 64 steps.

- ▶ Use the ▲/▼ rocker button (UP/DOWN) ⑧ to adjust the level of the received audio signal so that you can hear the speaker loud and clear.

## Adjusting the level of the internal microphone

You can adjust the level of the internal microphone (via which you can hear environmental sounds) in 64 steps.



- ▶ Press the SET button ⑦. The current level is displayed.
- ▶ Use the ▲/▼ rocker button (UP/DOWN) ⑧ to adjust a comfortable level.

### Note:

You can only adjust the level of the internal microphone when the internal microphone is switched on in the receiver's configuration. If, in addition, the automatic priority circuit is switched on, the internal microphone is faded out as soon as speech is being transmitted.

## Switching the channel

You can only switch between the released channels. This can be necessary when the selected channel is subject to interference.

Always set the receiver to the same channel as the transmitter. If interference occurs, check to ensure that the same frequency is assigned to the same channel on both transmitter and receiver.

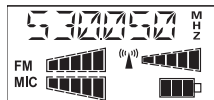
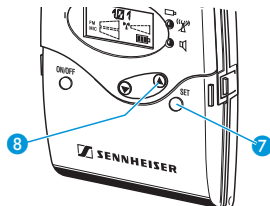


- ▶ Press the SET button ⑦ and keep it pressed for approx. five seconds. The current channel is displayed.
- ▶ Use the ▲/▼ rocker button (UP/DOWN) ⑧ to select a channel.

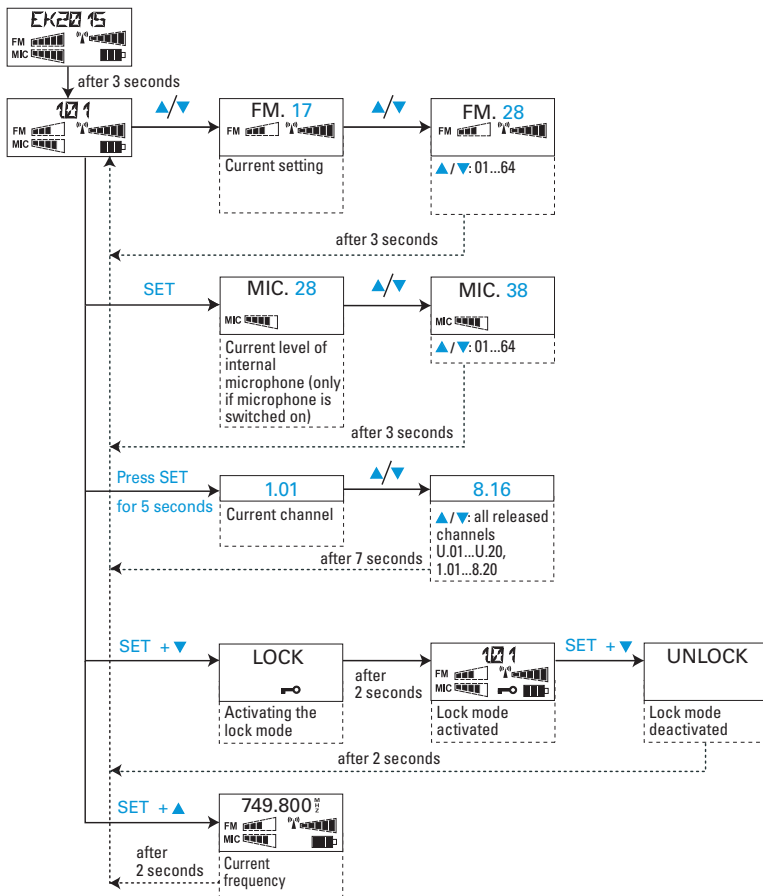
## Displaying the frequency

You can display the frequency stored in the selected channel. If you operate your system on one of the channels with a freely selectable frequency (channel bank "U"), this feature is very important as it allows you to check if the transmitter and the receiver are set to the same frequency.

- ▶ Press the **SET** button (7) and keep it pressed.
- ▶ Press the **▲** button (UP) (8). The current frequency is displayed.

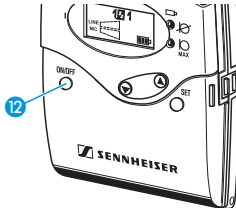


# Operating menu of the EK 2015 receiver



# Using the transmitter

## Switching the transmitter on/off



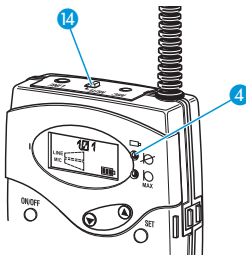
- ▶ Press the **ON/OFF** button (12) to switch the transmitter on. The name of the transmitter is displayed for approx. three seconds and then switches to the standard display.
- ▶ To switch the transmitter off, press the **ON/OFF** button (12) until "OFF" appears on the display.

### Note:

The transmitter can only be switched off when the standard display is shown on the display panel. When in the operating menu, briefly pressing the **ON/OFF** button will cancel your entry (ESC function) and return you to the standard display with the last stored settings.

## Muting the microphone

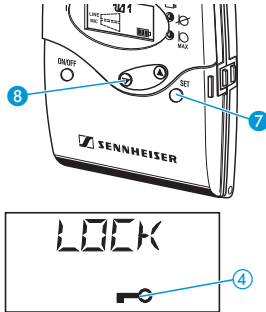
The transmitter has a **MUTE** (14) switch that noiselessly mutes the transmitted microphone signal. This switch does not switch off the transmitter.



- ▶ Set the **MUTE** switch to the position "MUTE". The red LED (4) lights up.
- ▶ Set the **MUTE** switch back to the original position to activate the microphone signal.

## Activating/deactivating the lock mode

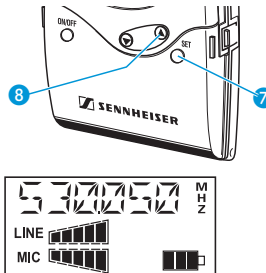
The transmitter has a lock mode that prevents accidental programming or switching the power off during operation. However, you can still mute the microphone.



- ▶ Press the **SET** button **7**.
- ▶ Press the **▼** button (DOWN) **8**. "LOCK" appears on the display. The lock mode is activated and the lock mode icon **4** appears on the standard display.
- ▶ To deactivate the lock mode, press the **SET** button **7** again and keep it pressed.
- ▶ Press the **▼** button (DOWN) **8**. "UNLOCK" appears on the display. The lock mode is deactivated and the lock mode icon **4** disappears from the standard display.

## Displaying the frequency

You can display the frequency stored in the selected channel. If you operate your system on one of the channels with a freely selectable frequency (channel bank "U"), this feature is very important as it allows you to check if transmitter and receiver are set to the same frequency.



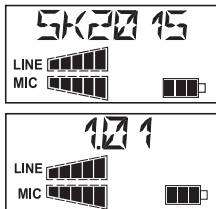
- ▶ Press the **SET** button **7** and keep it pressed.
- ▶ Press the **▲** button (UP) **8**. The current frequency is displayed.

## Working with the transmitter's operating menu

By way of example of the “CHAN” menu, this section describes how to use the transmitter's operating menu.

### Function of the buttons

| Mode             | Buttons | To ...                                                         |
|------------------|---------|----------------------------------------------------------------|
| Standard display | ON/OFF  | switch the transmitter on/off                                  |
|                  | SET     | get into the operating menu                                    |
|                  | ▲/▼     | without function                                               |
| Operating menu   | ON/OFF  | cancel the entry and return to the standard display            |
|                  | SET     | get into the setting mode of the selected menu                 |
|                  | ▲/▼     | change to the previous menu (▲) or change to the next menu (▼) |
| Setting mode     | ON/OFF  | cancel the entry and return to the standard display            |
|                  | SET     | store the settings and return to the previous menu level       |
|                  | ▲/▼     | adjust the setting of the selected menu: option (▲/▼)          |



After switching on the transmitter, the name of the transmitter is first displayed. After approx. three seconds, the standard display appears.

### Getting into the operating menu

- ▶ Press the **SET** button to get from the standard display into the operating menu. The last selected menu flashes on the display.

### Selecting a menu

- ▶ Press the **▲/▼** rocker button (UP/DOWN) to select a menu.



- ▶ Press the **SET** button to get into the setting mode of the selected menu. The current setting that can be adjusted flashes on the display.

### Adjusting a setting

- ▶ Press the **▲/▼** rocker button (UP/DOWN) to adjust the setting.

By briefly pressing the **▲/▼** rocker button, the display jumps either forwards or backwards to the next setting. In the “**SENSIT**” and “**CHAN**” menu, the **▲/▼** rocker button features a “fast search” function: If you hold down the **▲** or **▼** button, the display cycles continuously, allowing you to get fast and easily to your desired setting. The new setting flashes on the display until it is stored.



STORED

### Storing a setting

- ▶ Press the **SET** button to store the setting. “STORED” appears on the display, indicating that the setting has been stored. The display then returns to the top menu level.

With most menus, new settings become effective immediately without having to be stored. An exception is the “**CHAN**” menu. With this menu, new settings only become effective after they have been stored (“STORED” appears on the display, indicating that the setting has been stored).

### Exiting the operating menu

- ▶ Select the “**EXIT**” menu to exit the operating menu and to return to the standard display.

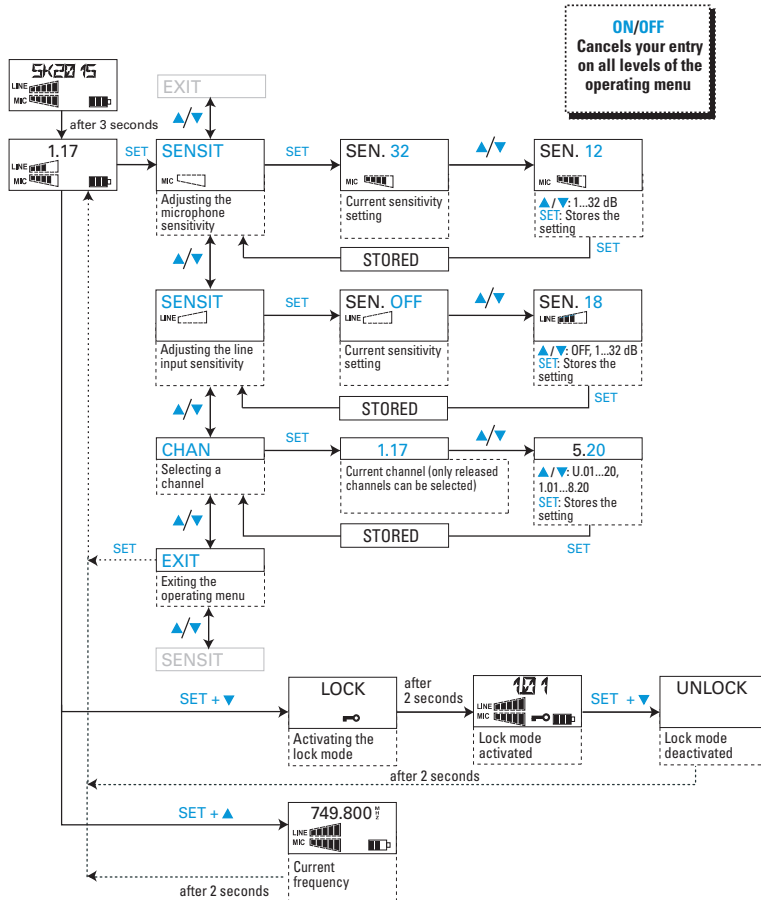
When in the operating menu, briefly pressing the **ON/OFF** button will cancel your entry (ESC function) and return you to the standard display without storing the setting.

EXIT

## Overview of menus

| Display              | Function of the menu                                             |
|----------------------|------------------------------------------------------------------|
| <b>SENSIT</b> (MIC)  | Adjusting the sensitivity of the microphone input                |
| <b>SENSIT</b> (LINE) | Adjusting the sensitivity of the line input                      |
| <b>CHAN</b>          | Switching the channel                                            |
| <b>EXIT</b>          | Exiting the operating menu and returning to the standard display |

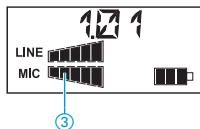
## Operating menu of the SK 2015 transmitter



## Adjustment tips for the operating menu of the transmitter

### Adjusting the microphone sensitivity

#### SENSIT (MIC)



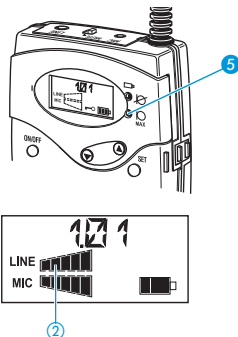
Via the “SENSIT (MIC)” menu, you can adjust the sensitivity of the connected microphone in 32 steps. The microphone sensitivity is correct adjusted when the display for microphone level (MIC) ③ shows full deflection only when you speak very loudly. The yellow LED ⑤ should only light up briefly.

#### Note:

For monitoring the adjusted microphone sensitivity, the display for microphone level (MIC) ③ is always indicated – even when the microphone is muted.

### Adjusting the sensitivity of the line input

#### SENSIT (LINE)



Via the “SENSIT (LINE)” menu, you can adjust the sensitivity of the line input in 32 steps.

The input sensitivity is adjusted too high when loud passages cause over-modulation in the transmission link. In this case, the yellow LED ⑤ will light up for longer periods of time. If, on the other hand, the sensitivity is adjusted too low, the transmission link will be undermodulated, which would result in a signal with high background noise.

The sensitivity is correctly adjusted when the display for line level (LINE) ② shows full deflection only during the loudest passages.

#### Note:

If the sensitivity of the line input is set to “OFF”, the display for line level (LINE) ② is not shown on the display panel.

## CHAN

### Switching between the channels

Via the “CHAN” menu, you can switch between the released channels. This can be necessary when the selected channel is subject to interference.

With the 2015 System, a transmitter can be received by several receivers on the same frequency. In this case, it may be necessary to switch to a channel that is released on all receivers.

Always set the transmitter and the receiver(s) of a transmission link to the same channel. For multi-channel operation, only use the released channels in one channel bank and, if possible, only use the channel banks “1” to “8” since these accommodate fixed preset frequencies which are intermodulation-free.

## EXIT

### Exiting the operating menu

Via the “EXIT” menu, you can exit the operating menu and return to the standard display.

# Troubleshooting

## Error checklist

| Problem                                                | Possible cause                                                       | Possible solution                                                                                                                                                   |
|--------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No display on the display panel                        | Battery pack or batteries at low capacity.                           | Recharge the battery pack or replace the batteries.                                                                                                                 |
| Receiver: No RF signal                                 | Transmitter and receiver are not on the same channel/frequency.      | Set transmitter and receiver to the same channel. Check if the frequency is the same. If this is not the case, set transmitter and receiver to a different channel. |
|                                                        | The transmitter is out of range.                                     | Reduce the distance between transmitter and receiver.                                                                                                               |
|                                                        |                                                                      | The technical expert must check the squelch threshold setting.                                                                                                      |
| Receiver: RF signal available, but no audio signal     | The transmitter's microphone is muted ("MUTE").                      | Deactivate the muting function.                                                                                                                                     |
| Microphone signal has a high level of background noise | The transmitter's microphone sensitivity is adjusted too low.        | Via the "SENSIT (MIC)" menu, increase the microphone sensitivity.                                                                                                   |
| Line signal has a high level of background noise       | The transmitter's line sensitivity is adjusted too low.              | Via the "SENSIT (LINE)" menu, increase the line sensitivity.                                                                                                        |
|                                                        | The transmitter's microphone signal interferes with the line signal. | Mute the transmitter's microphone ("MUTE").                                                                                                                         |
| Microphone signal is distorted                         | The transmitter's microphone sensitivity is adjusted too high.       | Via the "SENSIT (MIC)" menu, reduce the microphone sensitivity.                                                                                                     |
| Line signal is distorted                               | The transmitter's line sensitivity is adjusted too high.             | Via the "SENSIT (LINE)" menu, reduce the line sensitivity.                                                                                                          |

| Problem                        | Possible cause                     | Possible solution                                    |
|--------------------------------|------------------------------------|------------------------------------------------------|
| No access to a certain channel | The channel has not been released. | Set transmitter and receiver to a different channel. |
|                                |                                    | The technical expert must release the channel.       |

If problems occur that are not listed in the above table or if the problems cannot be solved with the proposed solutions, please contact your technical expert for assistance.

## Recommendations and tips

### ... for system planning

- Transmitter and receiver of a transmission link must be set to the same frequency.
- A transmitter can be received by several receivers on the same frequency.
- However, a receiver cannot receive several transmitters on the same frequency. Incorrect settings are indicated by crackling and chirping in the receiver.

### ... for the MKE 2015-0 plug-on microphone (optional accessory)

- Adjust the length of the neck strap so that the distance between the microphone and your mouth is 9.8 inches at the most.
- The plug-on microphone allows you to transmit group discussions. For this purpose, place the transmitter on the table on a soft and springy pad.

### ... for the ME 2015-H headset microphone (optional accessory)

- Always use the microphone with a popshield and position the microphone at the corner of the mouth.
- You can vary the bass reproduction by increasing/decreasing the talking distance.
- Make sure that the sound inlet is directed towards the mouth. The sound inlet is marked with a little dot.

### ... for the SK 2015 transmitter

- Make sure that the antenna and the microphone cable do not cross.
- For best results, make sure that the transmitter sensitivity is correctly adjusted.

### ... for optimum reception

- The system's range depends to a large extent on location and can be up to 164 feet. There should be a "free line of sight" between transmitting and receiving antenna.

### ... for multi-channel operation

- For multi-channel operation, you can only use the channels in a channel bank. Each of the channel banks "1" to "8" accommodates factory-preset frequencies which are intermodulation-free. For alternative frequency combinations, please refer to the enclosed frequency table. The freely selectable frequencies can be selected via the "**TUNE**" menu and can be stored in the channel bank "U".
- When using several transmitters simultaneously, interference can be avoided by maintaining a minimum distance of 7.8 inches between two transmitters.
- For multi-channel applications, use special accessories (see "System variants and accessories" on page 103).

## Care and maintenance

- Use a slightly damp cloth to clean the units from time to time.

### Note:

Do not use any cleansing agents or solvents.

- If you do not use the transmitter or receiver for extended periods of time (e.g. while you are on holiday), remove the battery pack or the batteries. After three months, the battery packs will need a refresh charge in the L 2015 charger. This prevents damage to the battery pack due to self-discharge.

# Configuration of the units by the technical expert

Depending on the area of application, the technical expert configures the transmitter and the receiver for optimum use.

## Working with the configuration menu

By way of example of the “FADE” menu, this section describes how to use the configuration menu.

### Function of the buttons

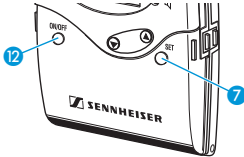
| Mode               | Buttons | To ...                                                         |
|--------------------|---------|----------------------------------------------------------------|
| “SETUP” display    | ON/OFF  | switch the transmitter or receiver on/off                      |
|                    | SET     | get into the configuration menu                                |
|                    | ▲/▼     | without function                                               |
| Configuration menu | ON/OFF  | cancel the entry and return to the “SETUP” display             |
|                    | SET     | get into the setting mode of the selected menu                 |
|                    | ▲/▼     | change to the previous menu (▲) or change to the next menu (▼) |
| Setting mode       | ON/OFF  | cancel the entry and return to the “SETUP” display             |
|                    | SET     | store the settings and return to the configuration menu        |
|                    | ▲/▼     | adjust the setting of the selected menu: option (▲/▼)          |

## Getting into the configuration menu

### Note:

In order to get into the configuration menu, the transmitter or receiver must be switched off.

- ▶ Press the **SET** button ⑦ and keep it pressed.
- ▶ Press the **ON/OFF** button ⑫ and keep it pressed for approx. five seconds. "SETUP" appears on the display.
- ▶ Press the **SET** button ⑦ to get into the configuration menu.



## Selecting a menu

- ▶ Press the **▲/▼** rocker button (UP/DOWN) to select a menu.
- ▶ Press the **SET** button to get into the setting mode of the selected menu. The current setting that can be adjusted flashes on the display.



## Adjusting a setting

- ▶ Press the **▲/▼** rocker button (UP/DOWN) to adjust the setting.

By briefly pressing the **▲/▼** rocker button, the display jumps either forwards or backwards to the next setting. In the "FADE", "TUNE", "NAME" and "ACCESS" menu, the **▲/▼** rocker button features a "fast search" function: If you hold down the **▲** or **▼** button, the display cycles continuously, allowing you to get fast and easily to your desired setting. The new setting flashes on the display until it is stored.



### Storing a setting

- Press the **SET** button to store the setting. "STORED" appears on the display, indicating that the setting has been stored. The display then returns to the top menu level.

With most menus, new settings become effective immediately without having to be stored. An exception are the **"RESET"** menus of both transmitter and receiver and the **"TUNE"** menu of the transmitter. With these menus, new settings only become effective after they have been stored.

### Exiting the configuration menu

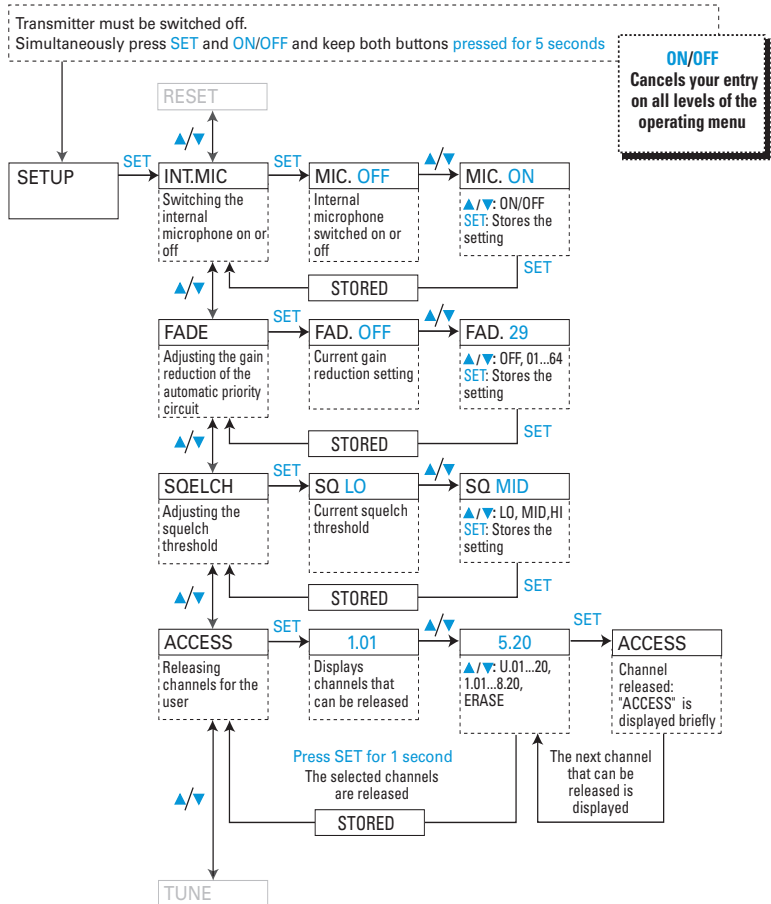


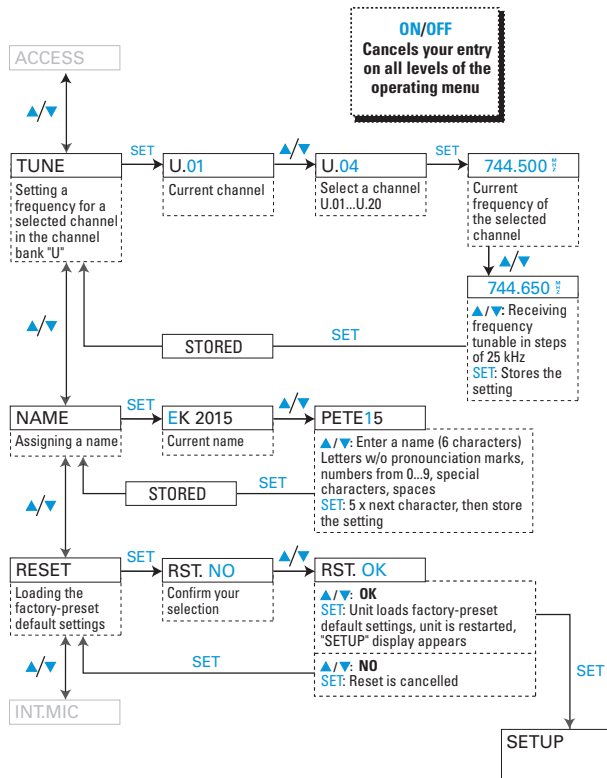
When in the configuration menu, briefly pressing the **ON/OFF** button will cancel your entry (ESC function) and return you to the "SETUP" display without storing the setting.

## Overview of menus

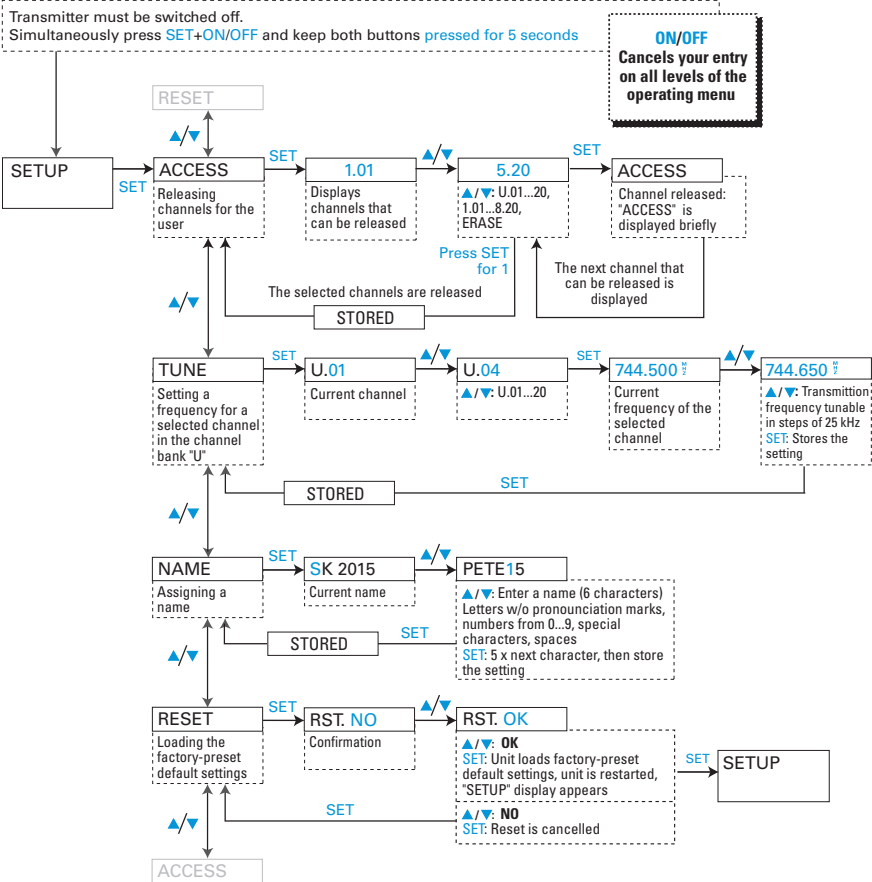
| Display | Receiver                                                                       | Transmitter                                                                    |
|---------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| SETUP   | Standard display in the configuration menu                                     | Standard display in the configuration menu                                     |
| INT.MIC | Switching the internal microphone on/off                                       | –                                                                              |
| FADE    | Adjusting the gain reduction of the automatic priority circuit                 | –                                                                              |
| SQELCH  | Adjusting the squelch threshold                                                | –                                                                              |
| ACCESS  | Releasing channels for the user                                                | Releasing channels for the user                                                |
| TUNE    | Setting a frequency for a selected channel in the channel bank "U" (user bank) | Setting a frequency for a selected channel in the channel bank "U" (user bank) |
| NAME    | Entering a name                                                                | Entering a name                                                                |
| RESET   | Resetting the unit to the factory-preset default settings                      | Resetting the unit to the factory-preset default settings                      |

# Structure of the configuration menu of the EK 2015 receiver





# Structure of the configuration menu of the SK 2015 transmitter



## Adjustment tips for the configuration menu

### Switching the internal microphone on or off (receiver only)

#### INT.MIC

The EK 2015 receiver has an internal microphone that picks up environmental sounds. The internal microphone can be switched on or off on via the “INT.MIC” menu.

### Adjusting the gain reduction of the automatic priority circuit (receiver only)

#### FADE

The receiver is equipped with an automatic priority circuit. This ensures that the gain of the hearing aid microphones or of the receiver’s internal microphone is reduced during speech transmission. The speaker has automatic priority over environmental sounds, providing for better speech intelligibility with the receiver. The internal microphone in the receiver has a preset gain reduction. For the hearing aid microphones, in contrast, you can adjust the gain reduction via the “FADE” menu. The higher the set value, the greater the gain reduction. In the “OFF” setting, the automatic priority circuit is switched off, i.e. the gain of the microphones is not reduced while the speaker is talking.

A speech filter completes the automatic priority circuit, ensuring that interfering noise such as banging doors do not trigger the automatic priority circuit.

### Adjusting the squelch threshold (receiver only)

#### SQELCH

The receiver is equipped with a squelch that can be adjusted via the “SQELCH” menu. The squelch eliminates annoying noise when the transmitter is switched off. It also suppresses sudden noise when there is no longer sufficient transmitter power received by the receiver.

There are three possible squelch settings:

- LO =low
- MID =middle
- HI =high

Selecting the setting “LO” reduces the squelch threshold, selecting the setting “HI” increases the squelch threshold. Adjust the squelch threshold – with the transmitter switched off – to the lowest possible setting that suppresses hissing noise.

#### Important notes:

If the squelch threshold is adjusted too high, the transmission range will be reduced. Therefore, always adjust the squelch threshold to the lowest possible setting.

When in the setting mode of the “SQELCH” menu, pressing the ▼ button (DOWN) for more than three seconds will switch off the squelch. “SQ.OFF” appears on the display. If no RF signal is being received, hissing noise will occur. This setting is for test purposes only.

### Releasing channels for the user

## ACCESS

Transmitter and receiver have nine channel banks with up to 20 switchable channels each. Via the “ACCESS” menu, you can restrict access to the channels by only releasing the channels to be available to the user.

#### Note:

The units are factory-preset so that all channels are available to the user.

In order to rule out the possibility that channels are released which should not be available to the user, we recommend that you first lock all channels and then release individual channels one after the other.

For multi-channel operation, we recommend that you only release the channels in one channel bank. Only use the channel banks “1” to “8” since these accommodate fixed preset frequencies which are intermodulation-free.

- ▶ To lock all channels, select “ERASE” from the “ACCESS” menu.
- ▶ Press the SET button to confirm your selection.  
All channels are now locked.

- ▶ To release individual channels, select the desired channel by using the ▲/▼ rocker button (UP/DOWN). (By briefly pressing the button, the display jumps either forwards or backwards to the next channel; by holding down the button, the display cycles continuously.)

**Note:**

You can display the frequency stored in the selected channel. To do so, press the SET button and the ▲ button (UP) simultaneously.

- ▶ Briefly press the SET button. The selected channel can now be accessed by the user. “ACCESS” briefly appears on the display and the display then displays the next channel that can be released.
- ▶ Have you released all required channels as described above? Store your settings by pressing the SET button until “STORED” appears on the display.

### Selecting the frequencies to be stored in the channel bank “U”

## TUNE

Via the “TUNE” menu, you can select the frequencies to be stored in the channel bank “U” (user bank). When selecting the “TUNE” menu, the transmitter or receiver automatically switches to the channel bank “U”.

**Note:**

Always assign the same frequency to the same channel on both transmitter and receiver.

- ▶ Use the ▲/▼ rocker button (UP/DOWN) to select the channel for which you want to set the frequency.
- ▶ Press the SET button to confirm your selection. The currently set frequency is displayed.
- ▶ Use the ▲/▼ rocker button (UP/DOWN) to select the desired transmission or receiving frequency. The frequencies are tunable in 25-kHz steps within a switching bandwidth of 36 MHz max. For intermodulation-free frequencies, please refer to the enclosed frequency table.

- ▶ Press the **SET** button to store your setting.

### Entering a name

## NAME

Via the “**NAME**” menu, you can enter a freely selectable name for the transmitter or receiver. This name is briefly shown on the display panel after switch-on.

The name can consist of up to six characters such as:

- letters (without pronunciation marks),
- numbers from 0 to 9,
- special characters e.g. ( ) - . \_ and spaces.

To enter a name, proceed as follows:

After you have entered into the setting mode of the menu, the first segment starts flashing on the display.

- ▶ Use the **▲/▼** rocker button (UP/DOWN) to select a character. By briefly pressing the button, the display jumps either forwards or backwards to the next character. If you hold down the button, the display starts cycling continuously.
- ▶ Press the **SET** button to change to the next segment.
- ▶ After you have entered the name completely press the **SET** button to store your setting and to return to the top menu level.

### Resetting the unit to the factory-preset default settings

## RESET

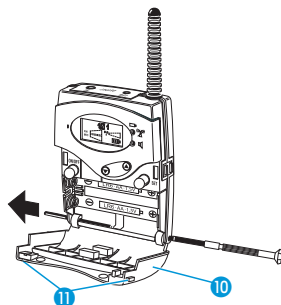
Via the “**RESET**” menu, you can reset the unit to the factory-preset default settings. In order to prevent an accidental reset, a safety query appears on the display. You can select “NO” or “OK”.

- “NO”: If you select “NO” and confirm your selection by pressing the **SET** button, the reset of the unit is cancelled and you return to the configuration menu.
- “OK”: If you select “OK” and confirm your selection by pressing the **SET** button, the unit is reset to the factory-preset default settings. After the reset, the unit is restarted and “SETUP” appears on the display.

## Colored battery doors and face plates

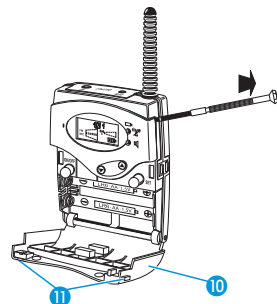
For an integrative teaching approach with several children and the teacher it is important that the children and the teacher distinguish their units easily. Colored battery doors (ordered separately) are available for both the transmitter and receiver. The receiver's face plate can also be replaced with colored ones (ordered separately). (see "System variants and accessories" on page 103).

### Changing the battery compartment cover



- ▶ Press the two unlocking buttons 11 and open the battery compartment cover 10.
- ▶ Insert a thin screwdriver into the small recess between the front cover and the lower part of the housing.
- ▶ Carefully lever out the front cover on both sides.
- ▶ First insert the colored front cover into the recess on the upper end of the battery compartment and then press it down onto the housing.
- ▶ Close the battery compartment.

### Changing the face plate (receiver only)



- ▶ Press the two unlocking buttons 11 and open the battery compartment cover 10.
- ▶ Use a thin screwdriver to push out the pin of the battery compartment cover.
- ▶ Replace the battery compartment cover with a colored one.
- ▶ Push the pin back in.
- ▶ Close the battery compartment.

## Additional information

### The channel bank system

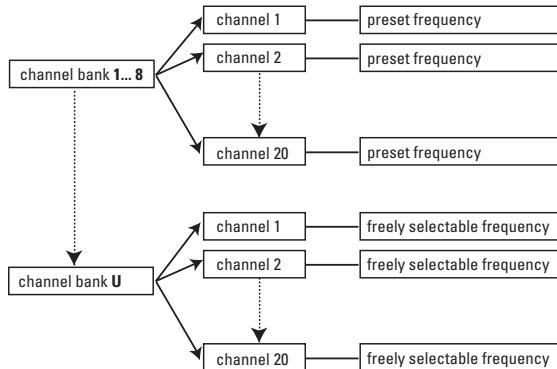
The 2015 System is available in three UHF frequency ranges with 1,440 transmission/receiving frequencies per frequency range. Please note: Frequency usage is different for each country. Your Sennheiser agent will have all the necessary details on the available legal frequencies for your area.

Range A: 518 to 554 MHz

Range B: 626 to 662 MHz

Range C: 740 to 776 MHz

Transmitter and receiver have nine channel banks with up to 20 switchable channels each.

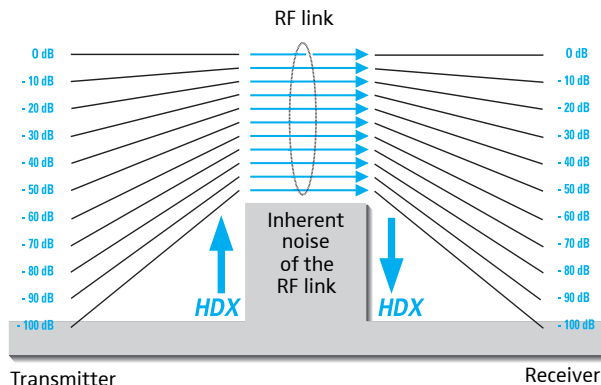


Each of the channels in the channel banks "1" to "8" has been factory-preset to a transmission/receiving frequency (see enclosed frequency table). These frequencies are preset and cannot be changed as country-specific regulations on frequency usage are taken into account. The channel bank "U" (user bank) allows you to store your selection out of 1,440 transmission/receiving frequencies that are freely selectable within the preset frequency range.

An advantage of the factory-preset frequencies is that

- the system is ready for immediate use after switch-on,
- several systems can be operated simultaneously on the preset channels of a channel bank without causing intermodulation interference.

## HDX noise reduction system



You can hear the difference:

This product is equipped with **HDX**, the Sennheiser noise reduction system that reduces RF interference. It increases the signal-to-noise ratio in wireless audio transmission. **HDX** is a wideband compander system which compresses the audio signal in the transmitter in a 2:1 ratio (related to dB) to lift it above the inherent noise floor of the RF link. A 110 dB dynamic range signal is thus transmitted with an effective dynamic range of only 55 dB, which is above the 60 dB noise floor of the RF link. In the receiver the signal is expanded in an identical and opposite way in a 1:2 ratio to restore the original signal, at the same time reducing the RF noise to below the noise floor of the receiver.

**HDX** has been specially developed for high quality RF microphone systems.

### Note:

Only transmitters and receivers that are equipped with **HDX** can work correctly with each other. If non **HDX** equipment was mixed with **HDX**, the dynamic range would be drastically reduced and the transmission would sound blunt and flat. **HDX** is permanently active and cannot be switched off.

# Specifications

## 2015 Mikroport® System

|                                                 |                                                                                                                                                                           |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>RF characteristics</b>                       |                                                                                                                                                                           |
| Modulation                                      | FM mono                                                                                                                                                                   |
| Frequency ranges                                | 518–554, 626–662, 740–776, 786–822, 830–866 MHz                                                                                                                           |
| Transmission/receiving frequencies              | 8 channel banks with up to 20 factory-preset channels each<br>1 channel banks with up to 20 freely selectable channels<br>(1,440 frequencies, tunable in steps of 25 kHz) |
| Switching bandwidth                             | 36 MHz                                                                                                                                                                    |
| Nominal/peak deviation                          | ±24 kHz / ±48 kHz                                                                                                                                                         |
| <b>AF characteristics</b>                       |                                                                                                                                                                           |
| Noise reduction system                          | Sennheiser <a href="#">HDX</a>                                                                                                                                            |
| AF frequency response                           | 80–16,000 Hz                                                                                                                                                              |
| Signal-to-noise ratio (at 1 mV, peak deviation) | 96 dB(A)                                                                                                                                                                  |
| THD (at nominal deviation, 1 kHz)               | ≤ 0.3 %                                                                                                                                                                   |
| <b>General data</b>                             |                                                                                                                                                                           |
| Temperature range                               | –10 °C to +55 °C                                                                                                                                                          |
| Dimensions of system case<br>(H x W x D)        | 9.8 x 8.1 x 6.9 inches                                                                                                                                                    |
| Weight of system case (equipped)                | approx. 5.7 lbs.                                                                                                                                                          |
| CE Certificate of Conformity                    | see last page                                                                                                                                                             |

## EK 2015 receiver

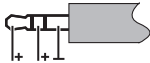
|                                              |                                                                                                                 |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Sensitivity (with HDX, peak deviation)       | typ. 1.4 $\mu\text{V}$ at 52 $\text{dBA}_{\text{rms}}\text{S/N}$                                                |
| AF frequency response of internal microphone | 200–10,000 Hz                                                                                                   |
| Adjacent channel rejection                   | typ. 75 dB                                                                                                      |
| Intermodulation attenuation                  | typ. 75 dB                                                                                                      |
| Blocking                                     | typ. 90 dB                                                                                                      |
| Squelch                                      | 4 steps: OFF<br>LO: 5 $\text{dB}\mu\text{V}$<br>MID: 15 $\text{dB}\mu\text{V}$<br>HI: 25 $\text{dB}\mu\text{V}$ |
| Power supply                                 | BA 2015 battery pack, 2.4 V<br>or AA size batteries, 1.5 V                                                      |
| Nominal voltage                              | 2.4 V DC                                                                                                        |
| Power consumption                            | typ. 110 mA                                                                                                     |
| Operating time                               | with BA 2015 battery pack<br>typ. 12 h<br>with batteries<br>typ. 12 h                                           |
| Headphone output                             | 3.5 mm jack socket: 2 x 20 mW/32 $\Omega$                                                                       |
| Output for hearing aid                       | 2.5 mm jack socket: 3 mV/2 $\text{k}\Omega$                                                                     |
| Dimensions (H x W x D)                       | 82 x 64 x 24 mm (without antenna)                                                                               |
| Weight (with BA 2015 battery pack)           | approx. 0.38 lbs.                                                                                               |
| Temperature range                            | –10 °C to +55 °C                                                                                                |

SK 2015 transmitter

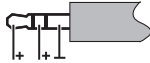
|                                                        |                                                                     |
|--------------------------------------------------------|---------------------------------------------------------------------|
| RF output power at 50 Ω                                | typ. 10 mW                                                          |
| RF radiating power                                     | typ. 1 mW                                                           |
| Spurious emission                                      | < 4 nW                                                              |
| Max. input voltage<br>(peak deviation/input impedance) | Microphone: 200 mV/5 kΩ (soft limiter threshold)<br>Line: 3 V/47 kΩ |
| Nominal voltage                                        | 2.4 V                                                               |
| Power consumption at nominal<br>voltage                | ≤ 120 mA                                                            |
| Power supply                                           | BA 2015 battery pack, 2.4 V<br>or AA size batteries, 1.5 V          |
| Operating time                                         | with BA 2015<br>battery pack<br>with batteries                      |
|                                                        | typ. 12 h<br>typ. 12 h                                              |
| Dimensions (H x W x D)                                 | 3.2 x 2.5 x 0.9 inches (without antenna)                            |
| Weight (with BA 2015 battery pack)                     | approx. 0.38 lbs.                                                   |
| Temperature range                                      | −10 °C to +55 °C                                                    |

Connector assignment

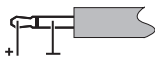
SK 2015:  
3.5 mm stereo jack plug,  
unbalanced



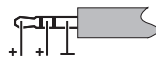
EK 2015:  
3.5 mm stereo jack plug,  
unbalanced



SK 2015:  
2.5 mm mono jack plug



EK 2015:  
2.5 mm stereo jack plug,  
unbalanced



## System variants and accessories

|                  |                                                                                        |               |
|------------------|----------------------------------------------------------------------------------------|---------------|
| System 2015-A-US | System with USA power supply                                                           | (518–554 MHz) |
| System 2015-B-US | with USA power supply                                                                  | (626–662 MHz) |
| System 2015-C-US | with USA power supply                                                                  | (740–776 MHz) |
| EK 2015 A        | EK 2015 receiver                                                                       | (518–554 MHz) |
| EK 2015 B        |                                                                                        | (626–662 MHz) |
| EK 2015 C        |                                                                                        | (740–776 MHz) |
| SK 2015 A        | SK 2015 transmitter                                                                    | (518–554 MHz) |
| SK 2015 B        |                                                                                        | (626–662 MHz) |
| SK 2015 C        |                                                                                        | (740–776 MHz) |
| MKE 2015-0       | Plug-on microphone for SK 2015, condenser, omni-directional, 2.5 mm jack plug          |               |
| MKE 2015-2       | Clip-on microphone for SK 2015, condenser, omni-directional, cable length: 31.2 inches |               |
| ME 2015-H        | Headset microphone for SK 2015, condenser, super-cardioid, cable length: 31.2 inches   |               |
| BA 2015          | Battery pack for EK 2015 and SK 2015                                                   |               |
| L 2015           | Charger for BA 2015 battery pack                                                       |               |

|               |                                                                                                                                |                                 |
|---------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
|               | Power supply for one L 2015                                                                                                    |                                 |
| NT 1-US       |                                                                                                                                | with USA mains connector, 120 V |
|               | Power supply for three L 2015                                                                                                  |                                 |
| NT 3-US       |                                                                                                                                | with USA mains connector, 120 V |
| KAB 80-E      | Connecting cable for hearing aid, binaural,                                                                                    |                                 |
|               | with 2.5 mm jack plug,                                                                                                         | cable length: 31.2 inches       |
| KAB 60-E      |                                                                                                                                | cable length: 23.4 inches       |
| KAB 40-E      |                                                                                                                                | cable length: 15.6 inches       |
| KA 80-E       | Connecting cable for hearing aid, monaural,                                                                                    |                                 |
|               | with 2.5 mm jack plug,                                                                                                         | cable length: 31.2 inches       |
| KA 40-E       |                                                                                                                                | cable length: 15.6 inches       |
| KAB 80-K      | Connecting cable for EZI 120 induction couplers, binaural,                                                                     |                                 |
|               | with 3.5 mm jack plug,                                                                                                         | cable length: 31.2 inches       |
| KAB 40-K      |                                                                                                                                | cable length: 15.6 inches       |
| KA 80-K       | Connecting cable for EZI 120 induction couplers, monaural,                                                                     |                                 |
|               | with 3.5 mm jack plug,                                                                                                         | cable length: 31.2 inches       |
| KA 40-K       |                                                                                                                                | cable length: 15.6 inches       |
| EZT 2015-20-S | Induction neck loop with 3.5 mm jack plug,                                                                                     | cable length: 7.8 inches        |
| EZT 2015-60-S | Induction neck loop with 3.5 mm jack plug,                                                                                     | cable length: 23.4 inches       |
| EZI 120       | Induction coupler for hearing aids without audio input                                                                         |                                 |
| EZB 2015      | System case (for the whole system incl. transport case with transport holding device for transmitter and receiver)             |                                 |
| EZG 2015      | Pouch with adjustable neck strap for SK 2015 or EK 2015                                                                        |                                 |
| ETC 2015-01   | Set comprising 3 battery compartment covers (for SK 2015 and EK 2015) and 3 front covers (for EK 2015) in yellow, blue and red |                                 |
| MAN 2015 PFM  | Instructions for use for System 2015 FM                                                                                        |                                 |

## Garantiebestimmungen

Wir übernehmen für das von Ihnen gekaufte Produkt eine Garantie von 24 Monaten. Ausgenommen hiervon sind dem Produkt beigelegte Zubehörartikel, Akkus und Batterien; denn diese Produkte haben wegen ihrer Beschaffenheit eine kürzere Lebensdauer, die zudem im Einzelfall konkret von Ihrer Nutzungsintensität abhängt.

Die Garantiezeit beginnt ab Kaufdatum. Zum Nachweis heben Sie bitte unbedingt den Kaufbeleg auf. Ohne diese Nachweise, die der zuständige Sennheiser-Service-Partner prüft, werden Reparaturen grundsätzlich kostenpflichtig ausgeführt.

Die Garantieleistungen bestehen nach unserer Wahl in der unentgeltlichen Beseitigung von Material- oder Herstellungsfehlern durch Reparatur, Tausch von Teilen oder des kompletten Geräts. Von der Garantie ausgenommen sind Mängel durch unsachgemäßen Gebrauch (z.B. Bedienungsfehler, mechanische Beschädigungen, falsche Betriebsspannung), Verschleiß, aufgrund höherer Gewalt und solche Mängel, die Ihnen beim Kauf bereits bekannt sind. Der Garantieanspruch erlischt bei Eingriffen in das Produkt durch nicht autorisierte Personen oder Werkstätten.

Im Garantiefall senden Sie das Gerät inklusive Zubehör und Kaufbeleg an den für Sie zuständigen Service-Partner. Zur Vermeidung von Transportschäden sollte möglichst die Original-Verpackung verwendet werden.

Ihre gesetzlichen Mängelansprüche aus dem Kaufvertrag gegen den Verkäufer werden durch diese Garantie nicht eingeschränkt. Die Garantie kann weltweit in allen Ländern – außer in den USA – in Anspruch genommen werden, in denen das jeweils nationale Recht unseren Garantiebestimmungen nicht entgegensteht

## Warranty regulations

The guarantee period for this Sennheiser product is 24 months from the date of purchase. Excluded are accessory items, rechargeable or disposable batteries that are delivered with the product; due to their characteristics these products have a shorter service life that is principally dependent on the individual frequency of use.

The guarantee period starts from the date of original purchase. For this reason, we recommend that the sales receipt be retained as proof of purchase. Without this proof (which is checked by the responsible Sennheiser service partner) you will not be reimbursed for any repairs that are carried out.

Depending on our choice, guarantee service comprises, free of charge, the removal of material and manufacturing defects through repair or replacement of either individual parts or the entire device. Inappropriate usage (e.g. operating faults, mechanical damages, incorrect operating voltage), wear and tear, force majeure and defects which were known at the time of purchase are excluded from guarantee claims. The guarantee is void if the product is manipulated by non-authorised persons or repair stations.

In the case of a claim under the terms of this guarantee, send the device, including accessories and sales receipt, to the responsible service partner. To minimise the risk of transport damage, we recommend that the original packaging is used. Your legal rights against the seller, resulting from the contract of sale, are not affected by this guarantee.

The guarantee can be claimed in all countries outside the U.S. provided that no national law limits our terms of guarantee.

## Conditions de garantie

La période de garantie pour ce produit Sennheiser est de 24 mois à compter de la date d'achat. Sont exclues, les batteries rechargeables ou jetables livrées avec le produit. En raison de leurs caractéristiques ces produits ont une durée de vie plus courte liée principalement à la fréquence d'utilisation.

La période de garantie commence à la date de l'achat. Pour cette raison, nous vous recommandons de conserver votre facture comme preuve d'achat. Sans cette preuve -qui est vérifiée par Sennheiser -aucune prise en compte de la garantie ne pourra être retenue.

La garantie comprend, gratuitement, la remise en état de fonctionnement du matériel par la réparation ou le remplacement des pièces défectueuses ou dans le cas où la réparation n'est pas possible, par échange du matériel. L'utilisation inadéquate (mauvaise utilisation, dégâts mécaniques, tension électrique incorrecte), sont exclus de la garantie. La garantie est invalidée en cas d'intervention par des personnes non-autorisées ou des stations de réparation non agréées.

Pour faire jouer la garantie, retournez l'appareil et ses accessoires, accompagnés de la facture d'achat, à votre distributeur agréé. Pour éviter des dégâts durant le transport il est recommandé d'utiliser l'emballage d'origine.

Votre droit légal de recours contre le vendeur n'est pas limité par cette garantie. La garantie peut être revendiquée dans tous les pays à l'extérieur des Etats-Unis à condition qu'aucune loi nationale n'en invalide les termes.

## Garanzia prodotti

La Sennheiser garantisce il prodotto da voi acquistato per una durata di 24 mesi. Sono esclusi da questa garanzia gli accessori in dotazione con il prodotto, gli accumulatori e le batterie perché questi prodotti hanno un ciclo di vita più breve che dipende molto dall'intensità d'utilizzo. Il periodo di garanzia decorre dalla data dell'acquisto. Fa fede il documento d'acquisto valido agli effetti fiscali che deve essere conservato. Senza questo documento, che deve essere controllato dal centro di servizio Sennheiser, qualsiasi riparazione viene effettuata solo dietro pagamento.

Le prestazioni gratuite di garanzia possono consistere nell'eliminazione del difetto di materiale o fabbricazione attraverso la riparazione, la sostituzione di parti o del completo apparecchio, secondo nostro insindacabile giudizio. Sono esclusi dalla garanzia i guasti derivanti da cattivo uso dell'apparecchio (p.e. mancata osservanza delle istruzioni all'uso, danneggiamenti meccanici, tensione d'alimentazione errata), dall'usura, da cause di forza maggiore o da malfunzionamenti già a vostra conoscenza al momento dell'acquisto. La garanzia decade inoltre in caso di manomissioni effettuate da persone o centri di manutenzione non autorizzate. In caso di un reclamo nel periodo di garanzia vogliate inviare l'apparecchio insieme agli accessori in dotazione e il documento d'acquisto al vostro centro servizio autorizzato.

Per evitare danni di trasporto consigliamo di utilizzare l'imballo originale. In caso di guasto questa garanzia non pregiudica i vostri diritti derivanti dal contratto d'acquisto verso il negoziante dove è stato acquistato il prodotto.

La garanzia è estesa a tutti i paesi del mondo, tranne agli Stati Uniti, e può essere applicata se la legislazione nazionale lo permette.

## Declaración de garantía

El periodo de garantía para este producto es de 24 meses desde la fecha de compra. Quedan excluidos los accesorios adjuntos al producto, acumuladores y baterías dado que, debido a sus características, la vida útil de dichos productos es mucho más corta y, en determinados casos, depende concretamente de la intensidad de utilización. El periodo de garantía comienza a partir de la fecha de compra. Por eso le recomendamos que guarde el recibo como prueba de compra. Sin dicha prueba, que será verificada por el respectivo concesionario Sennheiser, cualquier reparación que sea necesaria será efectuada contra factura.

Según determine el fabricante, las prestaciones de garantía consistirán en la eliminación gratuita de defectos de materiales o fabricación, por medio de reparación, sustitución de piezas, o bien en la sustitución del aparato completo. La garantía no tendrá validez en caso de defectos ocasionados por un uso inadecuado (tales como manejo incorrecto daños mecánicos, tensión de servicio equivocada), desgaste, o bien efectos de fuerza mayor, y desperfectos ya detectados en el momento de adquirir el producto. La garantía carecerá de validez si el defecto se debe a modificaciones y reparaciones hechas en el producto por personas o talleres no autorizados.

En caso de reclamación sirvase remitir el aparato incluyendo los accesorios y la factura al concesionario Sennheiser encargado de su zona. A fin de evitar daños durante el transporte se aconseja emplear el envase original. Las pretensiones legales por defectos y emanadas del contrato de compraventa frente al vendedor, no quedan limitadas por esta garantía.

La garantía está disponible en todos los países a excepción de EE.UU., siempre que la legislación nacional aplicable no sea contraria a nuestras determinaciones de garantía.

## Garantiebijbelingen

Wij hanteren voor onze producten een garantietermijn gedurende een periode van 24 maanden. Uitgezonderd hiervan zijn accessoires, accu's en batterijen die aan het product toegevoegd zijn; op grond van hun geaardheid beschikken deze producten over een kortere levensduur die van geval tot geval van hun gebruiksintensiteit afhangt.

De garantietermijn begint vanaf de aankoopdatum. Daarom dient u de originele aankoop- bon goed te bewaren. Zonder dit bewijs, dat door de Sennheiser servicepartner wordt gecontroleerd, worden reparaties in principe tegen kostenvergoeding uitgevoerd.

De garantievergoedingen bestaan naar onze keuze uit het kosteloze verhelpen van materiaal- of fabricagefouten op basis van vervanging (afzonderlijke onderdelen of het complete apparaat) danwel reparatie. De garantie vervalt bij verkeerd gebruik of onachtzaamheid

(bijv. bedieningsfouten, mechanische beschadigingen, onjuiste bedrijfsspanning), slijtage gevallen van force majeure of gebreken welke u reeds bij de aankoop heeft gekend. Het recht op garantie vervalt indien reparaties of wijzigingen zijn uitgevoerd door niet bevoegde personen of werkplaatsen. Indien u aanspraak maakt op garantie dient u het apparaat, inclusief accessoires en aankoopbon, franco aan de bevoegde servicepartner toe te zenden. Om beschadigingen gedurende het transport te voorkomen adviseren wij de originele verpakking te gebruiken.

Uw wettelijke garantieclaims tegenover de verkoper worden door deze garantie niet beperkt. De garantie kan wereldwijd in alle landen buiten de VS worden opgevorderd waarin de geldende nationale wetten niet in tegen.

## EU-Konformitätserklärung

### EC Declaration of Conformity

Sennheiser electronic GmbH & Co. KG  
Am Labor 1  
D-30900 Wedemark

Erklärt in alleiniger Verantwortung, dass das Produkt:  
Declare under sole responsibility that the product:

**Modell:** Mikroport-System 2015

**System Components:** SK 2015, EK 2015, BA 2015, L 2015, NT 1, MKE 2015-2

Nach den folgenden Richtlinien und unter Anwendung der harmonisierten Normen entwickelt, konstruiert und gefertigt worden ist. / To which this declaration relates, is in conformity with the following requirements:

**Low Voltage Directive 73/23/EEC, new 93/68/EEC,  
and corresponding article 3.1.1 R&TTE 1999/5/EEC**

Comprising the harmonized standards

IEC / EN 60065

- Audio, video and similar electronic apparatus - Safety requirements

**Electromagnetic compatibility 89/336/EEC,  
and corresponding article 3.1.2 R&TTE 1999/5/EEC**

Comprising the harmonized standards

ETSI EN 301 489-1/-9

- Electromagnetic compatibility and Radio spectrum Matters (ERM) – Electro Magnetic Compatibility (EMC) standard for radio equipment and services  
(CETECOM Test Report: 2-3696-01-03/04)

IEC / EN 61000-6-1 / -3

- Immunity and Emission standards for residential, commercial and light-industrial environments

## Radio spectrum R&TTE 1999/5/EEC, corresponding article 3.2

Comprising the harmonized standards

ETSI EN 300 422-1/-2, class II: - Radio Equipment and Systems (RES); for wireless microphones in the 25 MHz to 3 GHz frequency range. (CETECOM Test Report : 2-3696-01-01/04)

Qualitätszusicherung:

Der Herstellerbetrieb ist nach ISO 9001 : 2000 zertifiziert

Quality Assurance:

The product is produced by a manufacturing organisation on ISO 9001 : 2000 level

Wedemark, 27. 08. 2004

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Dr. Heinrich Esser  
President R&D

Certification for USA  
FCC: DMOB2AUWG

Certification pour Canada  
IC: 2099A-SK2015

**Bemerkung:**

Vor Inbetriebnahme sind die jeweiligen länderspezifischen Vorschriften zu beachten!

**Important:**

Before putting the device into operation, please observe the respective country-specific regulations!

**Important:**

Avant d'utiliser l'appareil, veuillez observer les dispositions légales en vigueur dans votre pays.

**Nota:**

Prima della messa in funzione seguite le prescrizioni vigenti nel paese nel quale viene utilizzato!

**Observación:**

!Anterior a la puesta en funcionamiento deberán observarse las correspondientes ordenanzas nacionales!

**Opmerking:**

Voor inbedrijfstelling dient u de afzonderlijke landspecifieke voorschriften in acht te nemen!

**CE 0682**









Sennheiser electronic GmbH & Co. KG  
30900 Wedemark, Germany  
Am Labor 1  
Phone +49 (5130) 600 0  
Fax +49 (5130) 600 300  
[www.sennheiser.com](http://www.sennheiser.com)

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